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ABSTRACT

The first three chapters of this booklet describe the utilization of observation as a measurement technique, the types of observation systems available, and the necessary components of an observation system. The second part focuses on the following four commonly used observation systems: 1) primary reading checklist, 2) student affective behavior checklist, 3) interaction analysis observation system, and 4) teacher self-appraisal observation system. Each system is analyzed in terms of the following components: 1) common communication structure, 2) coding procedures and format, 3) analysis, 4) ground rules, 5) coding unit, 6) method of observation, and 7) establishing reliability. A final chapter discusses the ways in which these systems can be utilized as evaluative tools for gathering feedback related to the teaching-learning process. (MBM)

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DEVELOPING OBSERVATION SYSTEMS

SECOND EDITION

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FOREWORD

This booklet is composed of two parts. Part I describes the utilization of observation as a measurement technique, the types of observation systems available, and the necessary components of an observation system.

Part II focuses on four commonly used observation systems and analyzes them in terms of the following components:

(1) Common Communication Structure

(2) Coding Procedures and Format

(3) Analysis

(4) Ground Rules

(5) Coding Unit

(6) Method of Observation

(7) Establishing Reliability

The observation systems presented in this booklet can be utilized as evaluative tools for gathering feedback related to the teaching-learning process.

PART I

OBSERVING BEHAVIOR

Chapter 1

INTRODUCTION

Currently in education, the focus is on accountability. One necessary component of accountability is the measurement of behavior. Basically, there are two ways to measure behavior. One method is through a "self-report" technique. In this instance, a person reports either in writing or orally what he knows or feels about something. Generally speaking, three formats are utilized. They are:

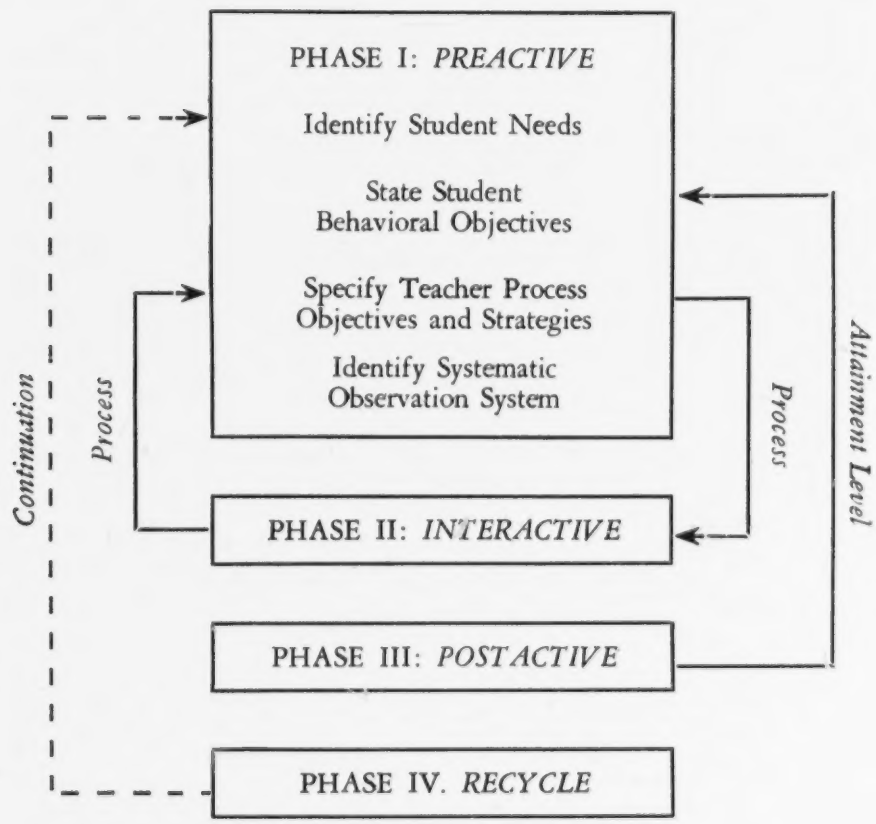
1. Commercial Tests
2. Locally Constructed Tests
3. Interviews

In the past, the self-report formats have dominated the measurement of behavior in education. Currently a second method, "systematic observation" has emerged as a valid and useful technique for obtaining behavior feedback. Observation systems focus on a few selected aspects of behavior. Several observation systems may be necessary in order to collect the feedback necessary to measure certain total behaviors.

Observation systems primarily are used as in-service training devices and more recently as a means for evaluating teacher effectiveness. In order to determine teacher effectiveness, the following scheme is suggested.

Figure 1

SCHEME FOR THE EVALUATION OF TEACHER EFFECTIVENESS



Pre-Active Phase

Four steps must be completed in the Pre-Active Phase. First, the teacher must identify student needs.[1] A student need is defined as the situation when the actual behavior of the student is below that which is expected. This implies that teachers must be aware of each student's performance capabilities and also his actual performance.

[1] *A Systematic Approach to Needs Assessment,* Educational Innovators Press, Tucson, Arizona, 1970.

After student needs have been identified, the teacher must then develop and write student behavioral objectives[2] related to the student's affective, cognitive, and psychomotor needs.

The third step of the Pre-Active Phase requires the teacher to develop and state the activities or process objectives that will be implemented to accomplish the student behavioral objectives.

The last step to be completed is the selection of an observation system that would describe the aspects of the teaching-learning process the teacher wishes to evaluate. Once these four steps are completed, Phase Two, the Inter-Active Phase, can be initiated.

Inter-Active Phase

During the Inter-Active Phase an observer would be present in order to code the actual situation. It is recommended that an audio or video record be made of the actual situation. This would provide the teacher an opportunity to code the Inter-Active Phase utilizing a pre-selected observation system.

Post-Active Phase

After the Inter-Active Phase has been coded, the feedback can be analyzed in order to determine how much of the Pre-Active Phase was successfully accomplished. It should be noted that three results are possible from the analysis:

(1) The Pre-Active Phase may be successfully implemented.

[2]*Developing and Writing Behavioral Objectives,* Educational Innovators Press, Tucson, Arizona, 1970.

(2) The Inter-Active Phase may result in something less than was planned in the Pre-Active Phase.

(3) A "golden moment" may result. Much more than the Pre-Active Phase may be completed. Should this opportunity present itself, complete the Pre-Active Phase and full speed ahead.

Once the data have been organized and reviewed, the Recycling Phase can be initiated.

Recycling Phase

The Recycling Phase includes the modifications and decisions necessary to improve the Pre-Active Phase steps. The analysis of the results in relation to the planned teaching process assists in validating the feedback.

In order to successfully implement the previously described scheme, the selection of an appropriate observation system is necessary. Although there are many observation systems available, these systems can generally be categorized into five or six types. Chapter 2 will describe the general types of observation systems.

Chapter 2

TYPES OF OBSERVATION SYSTEMS

Observation systems have become a popular technique for the purpose of collecting feedback related to various educational activities and behavior. It was recently reported that as many as eighty commonly used observation systems existed. In order to be useful, an observation system must focus on small bits of activity or behavior that is to be categorized.

Generally, observation systems can be classified into one of the following types or categories. The most common classification is *verbal interaction,* which describes talk between various persons in an educational setting. Usually the focus is on teacher-student verbal interaction or student-student verbal interaction.

A second type of observation system describes *activity* or what people do. The emphasis here is on the activities of a teacher, administrator, student, or teacher aide.

A third type of observation system emphasizes the *cognitive levels* of behavior or the intellectual development observed in a classroom setting. Basically questions and responses related to specific content are emphasized in these systems.

Non-verbal observation systems provide a fourth way of coding behavior. These systems focus mainly on hand and

head gestures, facial expressions, and body postures as a means for communication via the silent language.

Observation systems describing the *physical environment* are a fifth technique that is mainly utilized by accreditation agencies. The emphasis here is the description of space, materials, and equipment available in the educational facility.

A sixth type of observation system could be classified as a *potpourri* or miscellaneous set of systems. This type includes such things as sociograms, classroom climate scales, and teacher characteristic checklists.

Observation systems, for the most part, have been developed to serve specific needs in federally funded projects. In many instances educators have developed such systems as topics for doctoral dissertations. With the increased availability of audio and video equipment, many of these systems are now being utilized as techniques for improving instruction through in-service training. In some instances an observation system is utilized as a tool for gathering feedback for the evaluation of certain programs. Although many observation systems are now in existence, there are certain guidelines that should be followed in selecting a system for use in evaluation or in-service.

Chapter 3

COMPONENTS OF AN OBSERVATION SYSTEM

In selecting an observation system for use as a tool for evaluation or in-service training, look for the following components:

Common Communication Structure

Examine the observation system and determine if it includes:

1. terms,
2. simple definitions for the terminology,
3. related examples of the activities or behavior to be observed.

If any of these three items are absent from the observation system, it will be difficult to establish common communication with anyone concerning the activities and behavior to be observed.

Coding Procedures and Format

The mechanics or coding procedures for the observer should be as simple as possible. The observer should be provided a convenient and easy format for recording his observations. The format used to code the observed activity or behavior should be organized in such a manner that the codings can be readily analyzed.

Analysis

Once a situation has been coded, suggestions or directions should be available to assist the observer in preparing and organizing the observations in some meaningful manner for analysis. Basically the following question should be answered: "Once I have coded and collected these observations, what do they tell me?" The answer to this question can be formulated by describing the statistics that can be conducted using the collected observations in order to provide

(1) descriptive information about the instructional situation that was observed (measures of central tendency — mean, median, mode, measures of variability — range, standard deviation, variance, and other measures such as percents, frequencies, etc.),

(2) evidence for tests of significance concerning a given hypothesis that is being tested (chi square, t-test, analysis of variance, etc.).

Ground Rules

Study the observation system and determine if its categories are:

(1) all-inclusive,

(2) mutually exclusive.

An observation system generally includes a catch-all category or a ground rule which establishes a category of this type. If an activity or behavior is observed, and it is not defined by the other categories, it is placed in the catch-all category.

Thus the observation system becomes all-inclusive. Ground rules should be included to assist the observer in areas of uncertainty.

Regardless of how complete an observation system is in terms of definitions and examples for its categories, there are instances when a decision must be made between two categories due to some circumstance. Ground rules are developed to be applied in these situations in order to maintain reliability between observers. A good rule of thumb is: Develop as few ground rules as possible.

Coding Units

Observation systems differ as to the frequency of coding observed activities or behaviors. Several coding unit frequencies are utilized:

(1) Speaker change is used by coding each time a different person speaks.

(2) Time samples are used whereby an observation is coded every three, ten, or thirty seconds.

(3) Question-answer is many times used as a means for determining frequency of observations. Every question and answer is coded.

Method of Observation

Basically observation systems are utilized in one of the following situations:

(1) on-site observation,

(2) observations of audio tape recordings,

(3) observations of video tape recordings.

Audio and video tape recordings are advantageous because a record of the situation has been made and instant playback is available for coding and analysis.

Establishing Reliability

In selecting an observation system, it is helpful to know where and how training can be obtained in order to establish reliability in using the system. It is generally of interest to know if the observation system requires a single coder or more than one coder.

Summary

Observation Systems should contain several necessary components. In review they are:

(1) Common Communication Structure

(2) Coding Procedures and Format

(3) Analysis

(4) Ground Rules

(5) Coding Units

(6) Method of Observation

(7) Establishing Reliability

Part II of this booklet will review and analyze four observation systems with reference to the previously described components.

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PART II

SELECTED OBSERVATION SYSTEMS

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Chapter 4

PRIMARY READING CHECKLIST

This observation system describes thirty student cognitive reading skills and eleven student affective behaviors related to reading.

Figure 2
PRIMARY READING CHECKLIST

1. "Tuning the ear" (listening).
2. Completes sentences in stories where words are omitted (oral).
3. Repeats poem or story after teacher has read it.
4. Recalls incidents from the story.
5. Retells a story in sequence.
6. Predicts the story outcome.
7. Draws a picture of what has been read.
8. Identifies differences among stories.
9. Dramatizes a story that has been read.
10. Can tell the number of sounds (syllables) heard.
11. Follows words as page is read.
12. Frames words.
13. Completes sentences by using picture clues.
14. Recognizes rhyming words.
15. Locates smaller words in larger words.
16. Recognizes contractions.
17. Associates beginning sounds with phono-visual chart.
18. Associates medial sounds with phono-visual chart.
19. Associates ending sounds with phono-visual chart.
20. Associates vowel sounds with phono-visual chart.
21. Sounds out one-syllable words phonetically constructed.

22. Creates new words.
23. Recalls words orally within context.
24. Recalls words orally out of context.
25. Locates and uses words in sentences.
26. Locates and uses capital letters, commas, periods.
27. Builds sentences (transformation).
28. Completes open-ended sentences.
29. Dictates an experience to teacher.
30. Expresses oneself in writing.
31. Exhibits mild awareness toward reading.
32. Willingness to pay some attention to reading.
33. Looks for words, phrases, or ideas related to reading.
34. Responds to teacher's directions and requests.
35. Willingness to respond regularly to teacher's requests.
36. Volunteers to speak.
37. Volunteers to read.
38. Enjoys expressing himself.
39. Uses free periods to read (personal pleasure).
40. Exhibits favorable expressions toward reading activities.
41. Requests regularly to take reading materials home.

Common Communication Structure

Terms are listed as:

listening,
comprehension skills,
word unlocking techniques,
word recognition, etc.

Definitions of these terms take the form of examples. For instance, *listening* is described as "repeats poem or story after teacher has read it."

The categories are mutually exclusive, but the observation checklist is by no means all-inclusive. In this case the developers of the observation checklist were interested in only the list of forty-one student behaviors and the opportunities the students were given to exhibit these behaviors.

Coding Procedures and Format

The observation system is printed on an IBM 1230 form for data processing purposes. There is a form for each student. After each reading unit the teacher marks both the right column (did pupil have opportunity) and the left column (did you observe this behavior) if observed.

= Observed	= Opportunity	
=	=	1. "Tuning the ear" (listening).
=	=	2. Completes sentences in stories where words are omitted (oral).
=	=	3. Repeats poem or story after teacher has read it.

Ground Rules

The only ground rule for this observation checklist is: "If the student was not given [illegible] opportunity to respond, mark nothing."

Coding Unit

This observation checklist is utilized after a class period, a reading unit, or weekly in order to monitor individual student progress.

Method of Observation

Basically this observation checklist is used on-site (in the classroom).

Established Reliability

Training for established reliability is available from EPIC Diversified Systems Corporation. Reliability is generally established after two hours of training. Several observers can be

trained at once. Master coded training tapes are utilized to establish and check coder reliability.

Analysis

The observations are recorded on 1230 forms, and a computer program provides a print-out analysis of student opportunities and observed behaviors. The data is compiled in the form of frequence which can be used in conducting chi-square tests to determine if frequencies of student oportunities and observed behaviors differ significantly from what might be expected by chance.

Chapter 5

BEHAVIOR CHECKLIST STUDENT AFFECTIVE

This observation checklist is utilized to record student affective behavior related to:

(1) Self
(2) Group
(3) School and Society

Figure 3
AFFECTIVE BEHAVIOR CHECKLIST

Student Name_____
Class_____
Situation_____

= Observed	= Opportunity	BEHAVIORS RELATED TO SELF
=	=	1. Student verbally interacts with other students in the classroom when given verbal permission by teacher.
=	=	2. Student verbally responds to the teacher when called upon.
=	=	3. Student initiates verbal interaction with the teacher.
=	=	4. Student completes assignments and hands them in on time.
=	=	5. Student demonstrates low frustration level (angers easily, sulks, gives up).
=	=	6. Student withdraws (shy, bashful, doesn't raise hand or respond verbally when called upon).
=	=	7. Student is competitive (responds beyond requirements, wants to be first).

= = 8. Student brings outside materials into class without teacher request (books, magazines, pictures, etc.).

= = 9. Student uses resources without teacher direction (classroom or LRC resources, seeks information from outside sources).

= = 10. Student is not accepted by his classmates (one or more students pick on him, plays by himself, not chosen by other students for group activities).

BEHAVIORS RELATED TO GROUP

= = 11. When given permission by the teacher, student does not verbally interact with other students in a small group situation.

= = 12. Student is bossy and wants everything his way.

= = 13. Student is quarrelsome (loses temper with group, argues, etc.).

= = 14. Student accepts decisions made by the group.

= = 15. Student exhibits leadership (leading performer of group, takes lead in school activities, respected by students and teachers).

= = 16. Student indicates listening skills (responds with expected feedback).

= = 17. Student is courteous (takes turn, displays acceptable manners, etc.).

= = 18. Student has friends (liked by other students, popular, students want to be in his group).

BEHAVIORS RELATED TO SCHOOL AND SOCIETY

= = 19. Student physically abuses others (fights, badgers, hits, starts fights, etc.).

= = 20. Student verbally abuses others (curses, calls names, makes fun).

= = 21. Student defaces property (writes on desk, walls; tears books; carves initials).

= = 22. Student takes things not belonging to him (pencils, money, books, etc.).

= = 23. Student wastes materials (paper, crayons, pencils, etc.).

= = 24. Student disrespectful during patriotic situation (does not salute flag, does not sing "America," rushes through playfully).

= = 25. Student disobeys classroom and school rules (sent to principal, reprimanded by teacher, reported by safety patrol).

= = 26. Student defies adult authority (rebels to teacher openly).
= = 27. Student cannot stick to a given task until completed.
= = 28. Student chronic absentee (misses school a lot, tardy).

SELECT THE ONE OBSERVED STUDENT BEHAVIOR IN EACH OF THE FOLLOWING SELECTIONS:

_____29. Student Social Role:
a. leader
b. participator
c. disrupter
d. non-participator
e. none of these

_____30. Student Status:
a. chosen by students
b. rejected by students
c. face in the crowd
d. none of these

_____31. Student response to teacher expectations:
a. positive (eager, joyful, immediate response as expected)
b. negative (refuses to respond, uncooperative, negative comments)
c. indifferent (compliant, matter-of-fact response)
d. none of these

_____32. Non-participation behavior of student:
a. observes group
b. disrupts group
c. physically clings to teacher
d. entertains self
e. daydreams
f. none of these

_____33. Student response to teacher corrections:
a. student cries
b. student pouts
c. student becomes hostile
d. student accepts with interest
e. student accepts without reacting noticeably
f. student becomes embarrassed
g. none of these

_____34. Student special mechanism for gaining attention:
   a. excessive talking to other students
   b. tattling
   c. showing personal items (toys, trinkets, etc.)
   d. bringing presents
   e. complaining
   f. none of these

_____35. Student handles conflicts with other students:
   a. runs to teacher
   b. withdraws
   c. fights back
   d. cries
   e. tries to reason
   f. relies on friends to defend him
   g. none of these

_____36. Student classroom effort:
   a. acceptable (satisfies teacher)
   b. moderate (minimum teacher satisfaction)
   c. feeble (teacher unsatisfied)
   d. none of these

Common Communication Structure

Terms are listed as behaviors related to self, group, school, and society. Definitions and examples are given for the terms.

Coding Procedures and Format

Individual students are observed and coded as having the opportunity to exhibit the described behavior or observed exhibiting the behaviors. An IBM 1230 form is utilized for data processing purposes. The observer marks the left column (observed) or the right column (opportunity).

BEHAVIORS RELATED TO SELF

Student Name_____

Class_____

Situation_____

= Observed	= Opportunity	
=	=	1. Student verbally interacts with other students in the classroom when given verbal permission by teacher.
=	=	2. Student verbally responds to the teacher when called upon.
=	=	3. Student initiates verbal interaction with the teacher.
		Percent of time desired behavior was observed.

Ground Rules

The categories are mutually exclusive, but the observation checklist is not all-inclusive. These thirty-six student affective behaviors were identified as those of interest to the developers.

In order to mark "*observed*" for student listening, a behavior must occur only once; also the student does not have to have eye contact with the teacher, but simply comply to the teacher's request.

Coding Unit

This observation system is used after a class period for individual students.

Method of Observation

Basically this observation system is utilized on-site (in the classroom), with only a few students at a time.

Establishing Reliability

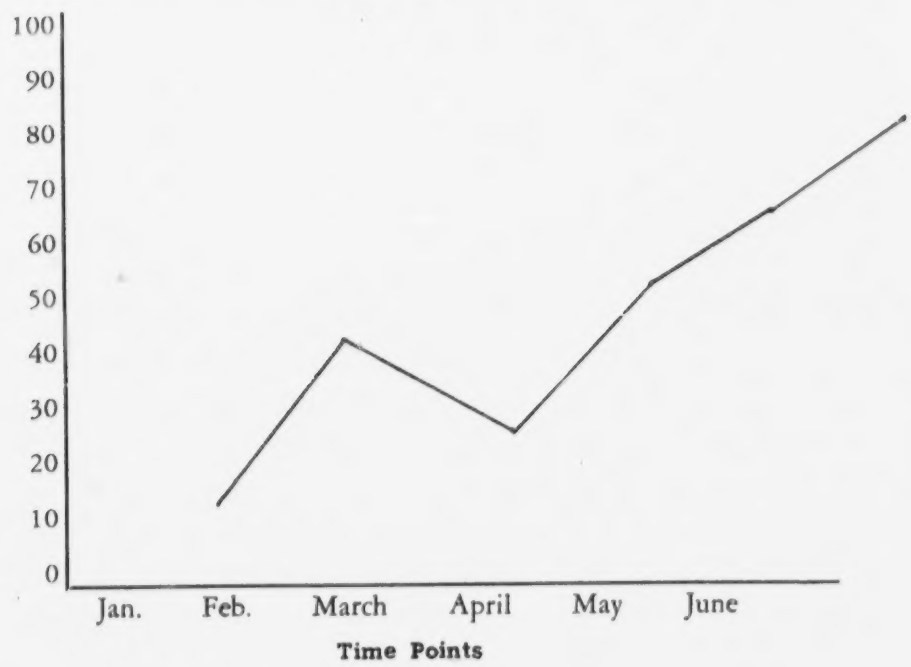
Training with training tapes is available from EPIC Diversified Systems Corporation. Reliability is generally estab-

lished after three hours of training. Master coded training tapes are used to establish coder reliability.

Analysis

Once the data have been recorded, they can be analyzed through the use of a trend line. Basically, a trend line is a graphic description of the percent or amount a desired or undesired behavior is observed and recorded over a given period of time. The following figure illustrates a trend line analysis.

Figure 4
PERCENT OF TIME DESIRED BEHAVIOR WAS OBSERVED



Chapter 6

INTERACTION ANALYSIS OBSERVATION SYSTEM

Interaction analysis is a systematic procedure for observing and recording verbal classroom interaction. The system is based on the assumption that verbal behavior is an adequate sample of a person's total behavior.

Flanders[3] (1965) developed a technique which quantifies the various verbal statements of both teachers and students. The model upon which the system was built concerns itself with distinguishing those teacher behavior patterns which tend to increase students' freedom to act (indirect) as opposed to those teacher behavior patterns which tend to decrease students' freedom of action (direct).

The Interaction Analysis Observation System provides information to teachers concerning their own verbal behavior in order that they might develop proper social skills for managing and controlling the classroom. Some of these social skills are the ability to (1) accept, clarify, and make constructive use of ideas and feelings expressed by students, (2) summarize in a discussion as a method of guiding inquiry, (3) ask broad or narrow questions and have the insight to predict the consequences of using either, and (4) utilize patterns of teacher behavior which are rarely taught in teacher preparation or in-service training courses.

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[3]Flanders, N. A., *Teacher Influence, Pupil Attitudes, and Achievement,* U. S. Office of Education Cooperative Research Monograph No. 12, Washington: U. S. Government Printing Office, 1965.

Figure 5
INTERACTION ANALYSIS OBSERVATION SYSTEM

TEACHER TALK	INDIRECT INFLUENCE	1.* ACCEPTS FEELING: accepts and clarifies the feeling tone of the students in a non-threatening manner. Feelings may be positive or negative. Predicting or recalling feelings are included.
		2.* PRAISES OR ENCOURAGES: praises or encourages student action or behavior. Jokes that release tension, not at the expense of another individual, nodding head, or saying, "um hm?" or "go on" are included.
		3.* ACCEPTS OR USES IDEAS OF STUDENT: clarifying, building, or developing ideas suggested by a student. As a teacher brings more of his own ideas into play, shift to category five.
		4.* ASKS QUESTIONS: asking a question about content or procedure with the intent that a student answer.
	DIRECT INFLUENCE	5*. LECTURING: giving facts or opinions about content or procedure; expressing his own ideas, asking rhetorical questions.
		6.* GIVING DIRECTIONS: directions, commands, or orders to which a student is expected to comply.
		7.* CRITICIZING OR JUSTIFYING AUTHORITY: statements intended to change student behavior from nonacceptable to acceptable pattern; bawling someone out; stating why the teacher is doing what he is doing; extreme self-reliance.
	STUDENT TALK	8.* STUDENT TALK — RESPONSE: a student makes a predictable response to teacher. Teacher initiates the contact or solicits student statement and sets limit to what the student says.
		9.* STUDENT TALK — INITIATION: talk by students which they initiate. Unpredictable statements in response to teacher. Shift from 8 to 9 as student introduces own ideas.
		10.* SILENCE OR CONFUSION: pauses, short periods of silence and periods of confusion in which communication cannot be understood by the observer.

*There is NO scale implied by these numbers. Each number is classificatory, it designates a particular kind of communication event. To write these numbers down during observation is to [illegible]erate, not to judge a position on a scale.

Common Communication Structure

This observation system contains ten categories, with seven categories defined as teacher verbal behavior. The observation system focuses on teacher-student verbal interaction.

The seven teacher categories are divided into teacher direct talk and teacher indirect talk. Teacher indirect talk includes four categories:

(1) accepting feelings,
(2) praising or encouraging,
(3) accepting ideas, and
(4) asking questions.

Teacher direct talk contains three categories:

(5) lecturing,
(6) giving directions, and
(7) criticizing.

Student talk is described in two categories:

(8) complying or responding to the teacher, and
(9) initiating talk.

The last category (10), silence or confusion, is used to handle anything that cannot be coded as teacher or student talk.

Coding Procedures and Format

This system can be utilized on-site, or with audio and video tape recordings. The observer records a number for each behavior observed, i.e., when a teacher question is ob-

served, a 4 is recorded. A teacher-student dialogue may be coded as follows:

6 Teacher: Open your books to page 3.

9 Student: What page did you say?

7 Teacher: You never listen. Pay attention to page 3.

4 Teacher: What color is the dog in the picture?

8 Student: Brown.

2 Teacher: Yes, very good.

Ground Rules

Two ground rules are generally utilized with this system.

1. If the observer is confused as to which category to record (i.e., Direction (6) or Criticism (7), the category furthest from Lecture (5) should be selected. In the above instance, Criticism (7) would be recorded.

2. If the observer is confused as to which category to record, Silence/Confusion (10) is selected.

* A special ground rule for the above sequence might be: Clarification questions by the student are coded as 9.

Each category is mutually exclusive. Category 10 is the catch-all category, thus making the system all-inclusive.

Coding Unit

Normally a three-second coding unit is utilized, although sometimes speaker change is utilized as the coding unit.

Method of Observation

The most commonly utilized method of observation is the use of audio tape recording, since the system emphasizes verbal interaction.

Establishing Reliability

Training with training tapes is available from EPIC Diversified Systems Corporation. Reliability is generally established after ten hours of training. Master training tapes are used to establish trainer reliability. A method for estimating observer reliability is an adaption of chi square or Scott's coefficient "Pi." Scott's coefficient is calculated by taking A, the proportion of agreement between two observers; subtract R, the proportion of agreement expected by chance, which is determined by squaring the proportion of tallies in each category and summing these over all categories:

$$Pi = \frac{A - R}{100 - R}$$

Analysis

After observations are recorded, they are transformed to a matrix for interpretation.

As pointed out in Matrix A, one of the most common and informative analyses is to plot the most prevalent interaction patterns that occurred during the observed episode. Also a I/D ratio can be computed which is simply a ratio of the frequency of use of indirect categories 1, 2, 3 and the frequency of use of direct categories 6, 7. In this case $I/D = \frac{3 + 23 + 121}{10 + 0} = \frac{147}{10} = 14.7$ which indicates a much higher use of the indirect categories than the direct categories by teacher. These results can then be compared to the teacher's original pre-active phase objectives.

Figure 6
MATRIX A

CATE-GORY	1	2	3	4	5	6	7	8	9	10	Total
1	-	-	-	-	-	-	-	-	-	-	--
2	-	1	1	1	2	-	-	1	5	-	11
3	-	-	5	1	4	-	-	-	-	-	10
4	-	-	-	23	2	1		42	3	5	76
5	-	2	1	22	80	1	2	3	3	3	117
6	-	-	-	1	-	-	1	3	-	-	5
7	-	-	-	-	2	1	1	-	-	-	4
8	-	5	-	22	19	-	-	45	7	-	98
9	-	3	3	3	7	-	-	3	32	-	51
10	-	-	-	3	1	2	-	1	1	-	8
Total	-	11	10	76	117	5	4	98	51	8	380
%	-	2.9	2.6	20.0	30.8	1.3	1.1	25.8	13.4	2.1	100.
of	25.5				33.2			39.2		2.1	
Total	Teacher Total: 58.7							Student Total		Si-lence	

I/D - 0.77 Steady State = 49%

$I/D_{8,\ 9}$ = 1.38 Content Cross = 70.8%

Chapter 7

TEACHER SELF-APPRAISAL OBSERVATION SYSTEM

The Teacher Self-Appraisal Observation System[4] was developed to include three aspects of teacher classroom behavior:

(1) teacher methods,

(2) teacher objectives, and

(3) teacher expressions.

The TSA system was constructed on the assumptions that

(1) every teacher in the classroom has some intended or desired outcomes (objectives),

(2) the teacher will select some means (methods) in order to achieve the objectives, and

(3) regardless of how specific a teacher's objectives or how appropriate the methods selected, the way the teacher expresses himself verbally and non-verbally greatly influences his teaching success.

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[4]Roberson, E. Wayne, *The Preparation of an Instrument for the Analysis of Teacher Classroom Behavior,* Unpublished doctoral dissertation, University of Arizona, Tucson, Arizona, 1967.

In order to use TSA, the teacher must develop a lesson plan describing the objectives that he intends to accomplish and the methods by which he will attain these objectives. After the video tape of the lesson is made, the teacher views the tape and marks on the TSA cards the methods, objectives, and expressions he used during the lesson. In order to determine teaching effectiveness, the teacher must use the TSA definitions in BOTH planning and coding the lesson. The teaching effectiveness can be validated by simply testing the students at the cognitive level planned, and comparing student responses with observed teacher intentions. The resulting correlations will help the teacher to determine just how effective his teaching is in terms of student learning.

METHODS	CLOSED	Lecture — teacher talk or information giving.
		Question — teacher interrogative request for specific information.
		Demonstrate — teacher supplements talk with visual clues or external props.
		Direction — teacher commands or insists students to comply.
		Mastery — teacher drills or practices specifics with students.
		Problem Solving — teacher sets or poses a situation which requires the student to arrive at a predetermined solution.
	OPEN	Clarification — teacher permits the student to express or elaborate feelings, opinions or thoughts without interruption.
		Inquiry — teacher pursues and challenges student statements, or permits students to question.
		Dialogue — teacher allows students to interact, react, and discuss a topic or idea with interjections, but not inhibiting behavior.
OBJECTIVES	AFFECTIVE	Receive — teacher intends the student to listen or be conscious of current classroom activity.
		Respond — teacher intends for the student to comply.
		Value — teacher intends for the student to realize the worth of information, idea, belief, or concept, by utilizing words such as "good," "beautiful," "excellent," etc.
	COGNITIVE	Know — teacher intends the student to recall specific information, for which there is only one correct answer.
		Comprehend — teacher intends the student to translate, interpret in his own words, predict or summarize given material.
		Apply — teacher intends the student to use the information in a situation that is different from the situation in which it was learned.

Analyze — teacher intends the student to separate, compare, and establish relationships between concepts, information and ideas.

Synthesize — teacher intends the student to combine previous learned information, opinions, and concepts into an original entity that satisfies the student.

Evaluate — teacher intends the student to make a choice or selection from a predetermined number of alternatives.

EXPRESSIONS — VERBAL

Support — teacher praises, repeats student response or uses student idea.

Helping — teacher repeats statement or gives cues and assistance that aids student.

Receptive — teacher indicates to a student that the lines of communication are open.

Routine — teacher expressions which cannot be categorized, as encouraging or inhibiting.

Inattentive — teacher disinterest or impatience displayed by statements such as "hurry up," "not now," etc.

Unresponsive — teacher openly ignores student question, request or response.

Disapproval — teacher admonishes, reprimands, or threatens student.

EXPRESSIONS — NONVERBAL

Support — teacher gestures facial expressions and voice tone that convey approval.

Helping — teacher gestures and pointing that assist students.

Receptive — teacher maintains eye contact with students.

Routine — teacher movements that cannot be coded as encouraging or inhibiting.

Inattentive — teacher does not maintain eye contact, or body gestures that demonstrate an unwillingness to listen.

Unresponsive — teacher gestures that openly ignore a student request.

Disapproval — teacher frowns, gestures, and voice tones that convey dissatisfaction with student behavior

Common Communication Structure

The TSA observation system includes:

(1) nine possible methods a teacher may select to use,

(2) nine levels of objectives to accomplish, and

(3) seven levels of verbal and non-verbal expressions to utilize.

The methods and objectives categories are hierarchies which are all-inclusive and mutually exclusive by level. The expressions categories are polar, with routine being the neutral or catch-all level.

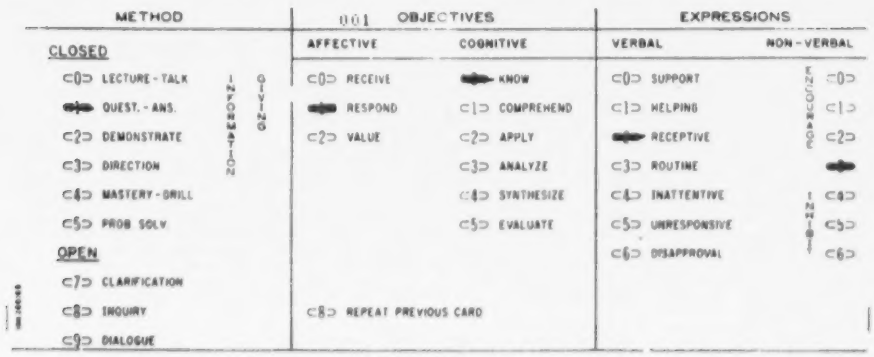
Coding Procedures and Format

When coding the tape, the teacher sits in front of the monitor and recorder with a deck of TSA coding cards. As the video tape is replayed, a superimposed beep will sound every ten seconds. Each time a beep is heard, the teacher stops the video tape and marks the

1. teacher method,
2. teacher desired student affective behavior,
3. teacher intended student cognitive behavior,
4. teacher verbal expression,
5. teacher non-verbal expression.

For instance, at the beep, the teacher has asked the question: "Who is the President of the United States?"

The TSA card would be marked as follows:



Ground rule one is utilized in marking the verbal category and ground rule five is utilized to mark the non-verbal category.

Ground Rules

Although the definitions of the TSA Observation System are adequate for the major part of coding teacher methods, objectives, and expressions, there are instances when you could mark more than one method, objective, or expression. Therefore, the following ground rules have been established in order to help you determine in a reliable manner which level of the teacher's methods, objectives, and expressions you should code.

Ground Rule 1 If you have marked the Respond level of the Affective Objectives category, then in the Verbal Expressions category, you will always mark the Receptive level, unless the teacher is clearly helping or supportive. When the teacher desires the student to respond, he has implied that the lines of communication are open, and that he is receptive to the student reply.

Ground Rule 2 If, when coding levels of the Methods, Affective and Cognitive categories, you are uncertain concerning two levels within the category, always code the level farthest from the top of the card. For instance, if you are uncertain as to whether the method is Lecture or Demonstrate, you would mark Demonstrate.

Ground Rule 3 If there is no teacher talk at the beep, mark the last teacher verbal behavior before the beep. You are assuming that the current silence is the on-going teacher verbal behavior.

Ground Rule 4 When the teacher permits students to express their ideas, opinions, and thoughts for the complete interval between beeps, then the method level is changed and marked as Clarification.

Ground Rule 5 When the teacher is not in the picture or is unobservable, the Routine level is marked in the non-verbal expressions category.

Ground Rule 6 If, in marking levels of verbal and non-verbal expressions a concern arises between levels of encouraging or inhibiting expressions, always mark the encouraging level (i.e., if concerned about Helping or Disapproval, Helping would be marked). If the concern is with two levels above Routine or two levels below Routine, always mark the level farthest from Routine (i.e., if con-

ERIC

cerned about Helping or Support, Support would be marked).

Ground Rule 7 If, at the beep, enough teacher verbal behavior is not given in order to code, play beyond the beep until you have enough clues to code. Never guess or assume what the teacher is going to say.

Ground Rule 8 Questions such as: can you?, would you?, do you?, etc., offer students yes/no responses, or a forced selection. These questions take much interpretation on the student's part if he is to guess what the teacher really wants. They are marked in the Cognitive Objectives category at the level of Evaluate. Since the student does not have to know anything about the idea or topic in order to respond yes or no, these questions provide little feedback on student Cognitive learning.

Ground Rule 9 When the teacher asks a question and names a student at the conclusion of the question, the method level of Direction is marked (i.e., "What time is it, Jack?"). When the teacher identifies the student and then poses the question, the method level of Question is marked (i.e., "Jack, what time is it?").

Coding Unit

A beep is superimposed on the audio or video tapes at 10 or 15 second intervals. The observer can stop the recorder in order to code. The time sampling unit may be varied at the discretion of the coder, but should be consistent for each tape.

Method of Observation

Video tapes are the most common method of observation.

Establishing Reliability

Training with training tapes is available from EPIC Diversified Systems Corporation. Reliability usually is established after five hours of training. Master training tapes are used to establish observer reliability. A chi square adaptation is used in estimating observer reliability.

Analysis

After the teacher has coded the video tape of his classroom performance, the deck of TSA cards can be computer processed to provide feedback in order that a comparison can be made between the planned performance and the actual performance. The computer print-out will provide the teacher with

(1) the percentage of time spent using certain methods,

(2) frequency of student participation,

(3) the range of cognitive responses obtained from students, and

(4) the percentage of encouraging, routine, and inhibiting expressions the teacher displayed.

By examining the profile of his teaching methods, objectives, and expressions, the teacher may discover that the discussion he planned did not take place, simply because he lectured all period and did not permit student response. Maybe the discussion did not materialize because he did not ask questions that would induce student discussion. The discussion may

have flopped because the teacher's verbal and non-verbal expressions were inhibiting. As a result of the analysis, the teacher may want to develop those skills he needs to accomplish his intentions. Therefore, a habitual analysis of teaching performance using some systematic observation system may encourage teachers to grow, develop, and improve in their professional careers.

Chapter 8

FEEDBACK AGENT OBSERVATION SYSTEM

There is an increasing use of observation systems in teacher training programs and teacher in-service activities. Many times, teachers who utilize an observation system such as Interaction Analysis[5] or Teacher Self-Appraisal[6] request that another person analyze their video or audio tapes and provide them feedback. The role of the feedback agent is a precarious one, since this person must provide the teacher objective feedback on the teaching situation previously coded and analyzed.

The feedback agent observation system provides information to the agent concerning their levels of feedback to the teacher.

For instance, the feedback agent may provide various levels of feedback to the teacher such as:

(1) consensus

(2) descriptive

(3) analysis

(4) alternatives

(5) talk

[5]Flanders, loc. cit.
[6]Roberson, loc. cit.

The feedback agent observation system also provides six categories of feedback agent talk:

(1) accepting feelings

(2) praise or encouragement

(3) accepting ideas

(4) asking questions

(5) talk and direction

(7) criticism

And two categories of teacher talk:

(8) predictable response and talk

(9) unpredictable response and talk

Common Communication Structure

This observation system contains five levels of agent feedback, six categories of feedback agent talk, and two categories of teacher talk.

The five levels of agent feedback are:

1. CONGRUENCE — Talk concerned with establishing *consensus* between the teacher and feedback agent with respect to the intent of the lesson/task/situation(s) observed. Topics of discussion could be objectives, methods, content, facilities, and organization.

2. DESCRIPTION — Talk concerned with describing the information that was collected during the observation period. This level could be viewed as more or less a review of what *actually* took place during the lesson/

task/situation(s) observed.

3. ANALYSIS — Talk concerned with comparing collected data and/or observations with the intent of the lesson/task/situation(s) observed. At this level, decisions would be made as to whether or not the intent of the lesson/task/situation(s) was achieved.

4. ALTERNATIVES — Talk concerned with suggesting or recommending changes or alternatives with respect to what might be done in the future to (1) improve the degree of accomplishment of the original intent of the lesson/task/situation(s) or (2) implement a different set of objectives, methods, facilities, co...nt areas, or organizational structures.

5. TALK — Talk not directly related to any of the levels of Congruence, Description, Analysis, Alternatives. In many cases, talk at this level will take place when there is a transition from one level to another.

The six categories of feedback agent talk are:

1. Accepting feelings
2. Praise or encouragement
3. Accepting ideas
4. Asking questions
5. Lecture and direction
7. Criticism

The two categories of teacher talk are:

8. Response and predictable talk
9. Initiation and unpredictable talk

Coding Procedure and Format

Utilizing the format below, at ten-second intervals, the coder marks the level of feedback and category of talk by the feedback agent or the teacher; thus a profile is developed concurrently with the coding of a feedback system.

Notice in the figure (page 46), the feedback agent begins with category 5 (lecture or direction) at level 5 (unrelated talk). This pattern continues for forty seconds or four intervals. Then the feedback agent continues to lecture (category 5) but at level 1 (congruence or consensus), the teacher then responds predictably (category 8) with congruences (level 1).

Ground Rules

Three ground rules are generally utilized in coding:

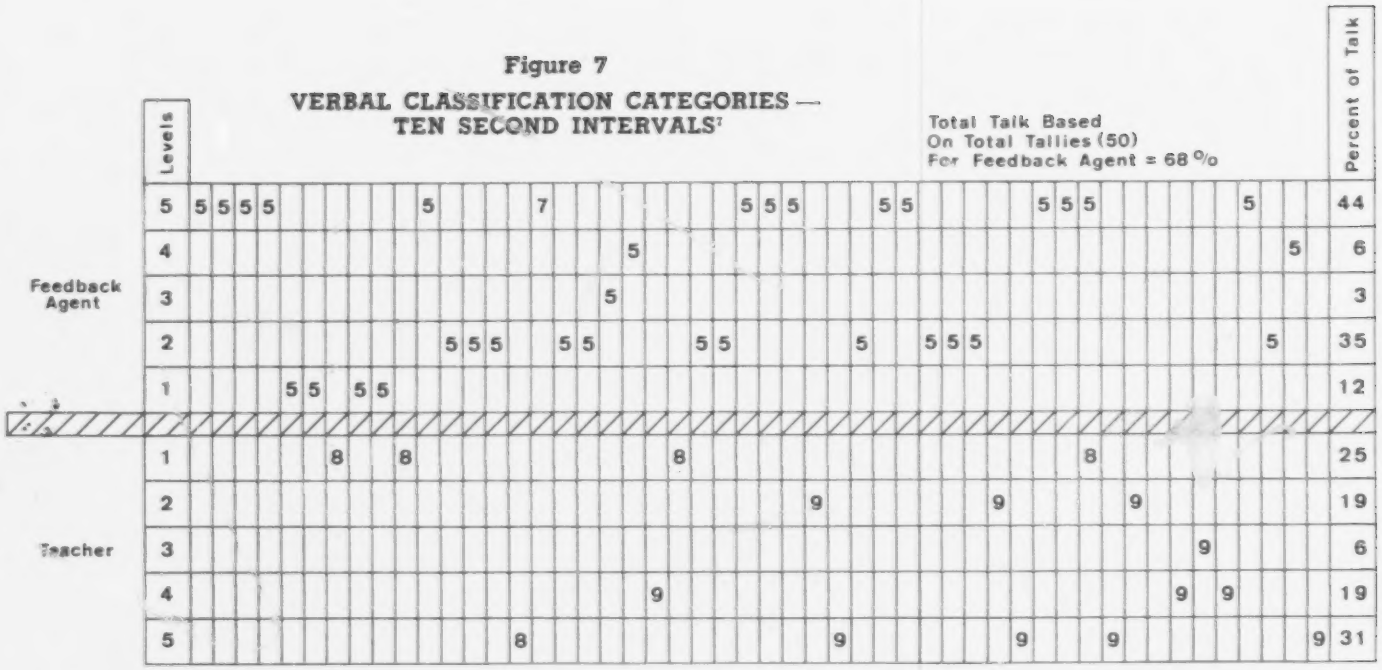
1. Praise and encouragement (2) and criticism (7) are coded at level 3.
2. If agreement cannot be reached, code the talk at level 5.
3. If silence occurs at the time the tape is stopped, code the statement prior to the silence.

Coding Unit

Basically a ten-second coding unit is utilized, although sometimes speaker change is utilized as a coding unit.

Figure 7

VERBAL CLASSIFICATION CATEGORIES — TEN SECOND INTERVALS[1]


Levels
Percent of Talk
Total Talk Based On Total Tallies (50) For Feedback Agent = 68 %
Feedback Agent
5 5 5 5 5 5 7 5 5 5 5 5 5 5 5 5 44
4 5 5 6
3 5 3
2 5 5 5 5 5 5 5 5 5 35
1 5 5 5 5 12
1 8 8 8 25
2 9 9 9 9 19
3 9 6
4 9 9 9 19
5 8 9 9 9 9 31
Teacher
Total Talk Based On Total Tallies (50) For Teacher = 32%

[1]This was developed by the EPIC Staff for the Workshop In Observation Skills conducted in January 1971 at the Tanque Verde Guest Ranch, Tucson, Arizona.

Method of Observation

The most commonly utilized method of observation is the audio tape recording, since this observation system emphasizes verbal feedback.

Establishing Reliability

Training with training tapes is available from EPIC Diversified Systems Corporation. Reliability usually is established after five hours of training. Master training tapes are used to establish observer reliability. A chi square adaptation is used in estimating observer reliability.

Analysis

After observations are recorded on the profile sheet, an interpretation can be made. A percentage of feedback agent talk and teacher talk can be computed. An analysis of the various levels of feedback can be made in order to determine the pattern of feedback. A profile such as the one above can provide valuable information to the agent regarding this feedback session.

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